Title (en)

LOW COST LEAN PRODUCTION BAINITIC STEEL WHEEL FOR RAIL TRANSIT, AND MANUFACTURING METHOD THEREFOR

Title (de)

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Title (fr)

ROUE EN ACIER BAINITIQUE DE FAIBLE COÛT ET ÉCONOMIQUE À PRODUIRE POUR LE TRANSPORT FERROVIAIRE, ET PROCÉDÉ POUR LA FABRIQUER

Publication

EP 3460089 A4 20190724 (EN)

Application

EP 17823655 A 20170706

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Abstract (en)

[origin: EP3460089A1] The present invention discloses a low cost lean production bainitic steel wheel for rail transit and a manufacturing method therefor. The steel wheel contains elements with the following weight percents: carbon C: 0.15-0.45%, silicon Si: 1.00-2.50%, manganese Mn: 1.20-3.00%, rare earth RE: 0.001-0.040%, phosphorus P#¤0.020%, and sulphur S#¤0.020%, where the remaining is iron and unavoidable residual elements, and 3.00%#¤Si+Mn#¤5.00%. Compared with the prior art, through alloying design and a preparation process, especially a heat treatment process and technology, a rim of the wheel obtains a carbide-free bainite structure, and a web and a wheel hub obtain granular bainite, a supersaturated ferritic structure, and a small amount of pearlite. The wheel has high comprehensive mechanical properties and service performance. In addition, the heat treatment process and technology are fully used without particularly adding alloying elements such as Mo, Ni, V, Cr, and B, to greatly reduce costs of steel and realize lean production.

IPC 8 full level

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Citation (search report)

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